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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,816

06/24/2005

Seiki Tamura

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6348

27305

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01/23/2009

HOWARD & HOWARD ATTORNEYS PLLC
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EXAMINER

MATTISON, LORI K

ART UNIT

PAPER NUMBER

1619

MAIL DATE

DELIVERY MODE

01/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,816	Applicant(s) TAMURA, SEIKI	
	Examiner LORI MATTISON	Art Unit 1619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/07/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 4-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/07/2005; 06/24/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1619.

The examiner notes amendments to claims were filed on 06/24/2005, 07/14/2008, and 11/07/2008. These amendments were not compliance with 37 CFR 1.121(c). Specifically, brackets in the patent claims indicate that text has been deleted, suggesting that there are no limitations following the chemical structure. Applicant should refer to 37 C.F.R. 1.121 for instructions on making claim amendments. In the future, failure to comply fully with the provisions of 37 C.F.R. 1.121 will necessitate the mailing of a notice of noncompliance.

The examiner notes that the moiety Y⁸ copolymer B of claim 4 is undefined. If the application is later amended to define Y⁸ for being selected from a group then another supplemental restriction requirement may be necessary. In interest of compact prosecution, it is suggested that applicant make a provisional election for the species Y⁸ if claim limitations are added that include options for this variable.

Status of Claims

Claims 1-14 are pending. This is the first Office Action on the merits.

Election/Restrictions

Applicant's election with traverse of claims 1 and 3, in the reply filed on 7/14/2008 is acknowledged. Claims 4-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species,

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there being no allowable generic or linking claim. Election was made with traverse in the reply filed on 07/14/2008. The traversal is on the ground(s) that claims 2 and 5-14 fall under the scope of the elected species in claims 1 and 3. This was found persuasive in part because claim 2 recites a limitation with regard as to the mass % of the block copolymer in the composition. The traversal regarding claim 4-14 is not found persuasive because claims 4-14 demonstrate *a posteriori* lack of unity (M.P.E.P. § 1801). In particular the element in common to all the claims, block copolymer A is known [see US Patent No. 6,187,891 (Rautschek, 2001) and JP 09 -059132 (Ando; previously cited)]. Since block copolymer A is not a technical feature that defines a contribution over the prior art, there is a lack of unity *a posteriori* (M.P.E.P. § 1801). Examination on the merits will commence on claims 1-3 ONLY.

Claim Objections

Claim 1 is objected to because of the following informalities: a period is present in the middle of claim 1. Specifically the line that recites “b1” is 1 or a greater integer;.” Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,187,891 (Rautschek, 2001).

Rautschek teaches block copolymer A. Rautschek's copolymer has a generic formula, IV (Col.2 line 50) subunit A is taught to be that of formula II, (Col. 2, line 55). The "b" and "c" integers of the "A" subunit may be 0 as taught by the embodiments in Table 1 (Col's 9 and 10, See example H5/CP5), thus subunit A reads on applicants elected species for R^2 . The $(BC)_n$ block of Rautschek corresponds to applicants "c" "block. Rautschek's "B" subunit (Formula III; Col. 2, line 65) corresponds to applicant's polyorganosiloxane block. The "d" integer may be between 1 to 100, reading on Applicant's "a" integer. Rautschek's subunit "C" reads on the remaining portion of applicants "c " block, with Rautschek's "b" and "c" integer being zero (Formula IV, Col. 3 line 5; Table 1 Col's 9 and 10 for specific embodiment see example H5/CP5). Subunit "B" is reads on applicant's polyorganosiloxane. Subunit A, with "b" and "c" integers being zero, read on R^2 . With regard to the average molecular weight of the polyorganosiloxane block, Rautschek teaches the R^3 substituents (corresponding to applicants R^1 substituents) may be any number of substituted or unsubstituted,

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saturated, and/or unsaturated hydrocarbon radicals from 1 to 20 carbon atoms (Col. 2 lines 60 to end; top of Col.3) and d is permitted to repeat up to 400 times (Col. 3, lines 1-15) thus the molecular weight may be at least 192,000 depending on the selection of substituents and integers. With regard to the polyorganosiloxane block constituting 50-99% of the mass of block copolymer A. Rautschek teaches that the "d" integer may repeat up to 400 times (Col. 3, lines 1-15), while the BC subunit is taught to be greater than 1 but should be chosen depending on the subsequent intended use (Col. 4 lines 25-30). Thus it is obvious to optimize the mass of the polyorganosiloxane block to the mass of the copolymer based upon use of the polymer. With regard to the polyoxyalkylene block, "a" may be up to 200 thus the molecular weight is 8,800 and is within the range of 130 to 10,000. With regard to the average molecular weight of the block, this may be optimized by selection of substituents, the number of times d integer repeats and the selection of duplication of BC subunit based upon the intended of the copolymer. Rautschek further teaches that the weight ratios of a to b to c may change depending on the desired copolymer (Col.5, lines 60-end). Rautschek also teaches that the molecular weight of copolymers may be easily controlled by controlling the size of "n" and the ratio of (a) to (b) to (c) (Col. 6 lines 1-20). Viscosity and molecular weight also increase with increasing values of "n" (Col. 6 lines 1-20). Rautschek teaches that molecular weight, via the size of n, may be set to necessary requirements (Col. 6 lines 1-20). Rautschek teaches use of the copolymers in an amount of 0.01-8% as a foam stabilizers (reading on instant claims 2).

A person of ordinary skill in the art would have had a reasonable expectation of success in optimizing within the prior art conditions taught by Rautschek through routine experimentation to yield the recited block copolymer A because Rautschek teaches each moieties and the number of repeating units for each moiety for the block copolymer and even provides embodiments for some of the subunit blocks. The skilled artisan would have been motivated to do so because Rautschek invites optimization through disclosure that the molecular weight and viscosity may be optimized depending on the requirements for the application to which they are being applied.

It therefore would have been obvious to a person of ordinary skill in the art at the time the invention was made to optimize by routine experimentation based upon the teaches of Rautschek to yield the recited block copolymer A because Rautschek teaches and/or embodies the moieties, the number of repeating integers, and provides a teaching to optimize the a,b,c, and n units to the desired viscosity and molecular weight depending on the application for the copolymers

With regard to instant claim 3, Rautschek also teaches the recited block copolymer B. Generic formula IV [Col.2 line 50; $A(BC)_nBA$] teaches that subunit A is that of formula II, (Col. 2, line 55) The "c" integer of the "A" subunit may be 0 (see Table 1, Col 9-10, Example H7/CP7 which embodies integers a and b while omitting integer c (Formula IV, Col. 3 line 5; Table 1 Col's 9 and 10 for specific embodiment see example H7/CP7) , and thus subunit A reads on applicant's elected species for R^4 . The $(BC)_n$ block of Rautschek corresponds to applicants "c" block. Rautschek's "B" subunit (Formula III; Col. 2, line 65) corresponds to applicant's polyorganosiloxane block. The

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"d" integer may be between 1-100, reading on Applicant's "a" integer. Rautschek's subunit "C" reads on the remaining portion of applicants "c' " block. With regard to the average molecular weight of the polyorganosiloxane block, Rautschek teaches the R^3 substituents (corresponding to applicants R^3 substituents) may be any number of substituted or unsubstituted, saturated, and/or unsaturated hydrocarbon radicals from 1 to 20 carbon atoms (Col. 2 lines 60 to end; top of Col.3) and d is permitted to repeat up to 400 times (Col. 3, lines 1-15) thus the molecular weight may be at least 192,000 depending on the selection of substituents and integers. With regard to the polyorganosiloxane block constituting 0.7-97.5% of the mass of block copolymer A, Rautschek teaches that the "d" integer may repeat up to 400 times (Col. 3, lines 1-15), while the BC subunit is taught to be greater than 1 but should be chosen depending on the subsequent intended use (Col. 4 lines 25-30). Thus it is obvious to optimize the mass of the polyorganosiloxane block to the mass of the copolymer based upon use of the polymer. With regard to the polyoxyalkylene block, "a" and "b" may repeat up to 200 times each may thus the molecular weight is 102-20,400 and reads on the range of 130 to 10,000. With regard to the average molecular weight of the block, this may be optimized by selection of substituents, the number of times d integer repeats and the selection of duplication of BC subunit based upon intended use of the copolymer. As discussed supra, Rautschek further teaches that the weight ratios of a to b to c may change depending on the desired copolymer (Col.5, lines 60-end). Rautschek also teaches that the molecular weight of copolymers may be easily controlled by controlling the size of "n" and the ratio of (a) to (b) to (c) (Col. 6 lines 1-20). Viscosity and molecular

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weight also increase with increasing values of "n" (Col. 6 lines 1-20). Rautschek teaches that molecular weight, via the size of n, may be set to necessary requirements (Col. 6 lines 1-20). Rautschek teaches use of the copolymers in an amount of 0.01-8% as a foam stabilizers (reading on instant claims 3). Rautschek teaches that one or more polyetherpolysiloxane copolymers may be used as a foam stabilizer (Rautschek, claim 11).

A person of ordinary skill in the art would have had a reasonable expectation of success in optimizing within the prior art conditions taught by Rautschek through routine experimentation to yield the recited block copolymer B because Rautschek teaches each moieties and the number of repeating units for each moiety for the block copolymer and even provides embodiments for some the subunits blocks. The skilled artisan would have been motivated to do so because Rautschek invites optimization through disclosure that the molecular weight and viscosity may be optimized depending on the requirements for the application to which they are being applied.

It therefore would have been obvious to a person of ordinary skill in the art at the time the invention was made to optimize by routine experimentation based upon the teaches of Rautschek to yield the recited block copolymer B because Rautschek teaches and/or embodies the moieties, the number of repeating integers, and provides a teaching to optimize the a, b, c, and n units to the desired viscosity and molecular weight depending on the application for the copolymers.

A person of ordinary skill in the art would have had a reasonable expectation of success in combining the copolymers in a composition because Rautschek teaches that

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multiple copolymers may be used in antifoam compositions. The skilled artisan would have been motivated to do so because Rautschek teaches that the polymers may be combined and it is obvious to combine equivalents known for the same purpose.

It therefore would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the two block copolymers taught by Rautschek in the same composition.

Therefore, the invention as a whole would have been prima facie obvious to a person of ordinary skill at the time the invention was made.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LORI MATTISON whose telephone number is (571)270-5866. The examiner can normally be reached on 8am-6pm (Monday-Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571)272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LORI MATTISON/
Examiner, Art Unit 1619

/Lora E Barnhart/
Primary Examiner, Art Unit 1651